MASTER OF SCIENCE
IN
SPACE SYSTEMS OPERATIONS

NPSAT1 MISSILE SYSTEM PRELAUNCH SAFETY PACKAGE (MSPSP)

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NPSAT1 will be launched as a secondary payload on the Evolved Expendable Launch Vehicle (EELV) Atlas V. The Atlas V will provide a medium lift capability in the EELV class of launch vehicles. NPSAT1 will be mated to the Atlas V using the EELV Secondary Payload Adapter (ESPA). The design and operations of NPSAT1 will require that the space vehicle pose no hazards to ground support equipment, personnel, the launch vehicle, or other payloads. Potential hazards include structural failure, inadvertent deployment of antennas or other mechanisms, inadvertent radio frequency emissions, and other hazards.

The scope of this thesis is to assess the safety risks associated with NPSAT1 for all activities occurring at the launch site through orbit insertion. This includes ground testing at the integration site as well as in-flight operations prior to and shortly after separation from the launch vehicle. All hazards associated with NPSAT1 are to be enumerated and assessed for criticality. Hazard mitigation is to be presented preferably through subsystem design but may also be performed through operations.

KEYWORDS: NPSAT1, MSPSP, Missile System Prelaunch Safety Package